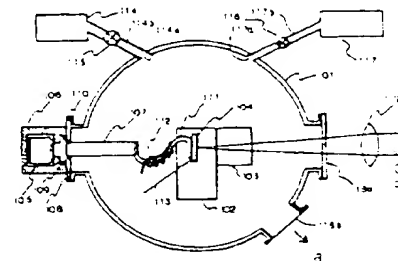


## (54) X-RAY GENERATING METHOD AND X-RAY GENERATING DEVICE

(11) 5-258692 (A) (43) 8.10.1993 (19) JP  
 (21) Appl. No. 4-51366 (22) 10.3.1992  
 (71) NIKON CORP (72) HIROYUKI KONDO(2)  
 (51) Int. Cl. H01J35/22, G21K1 00, H05G2 00, H05H1 24

**PURPOSE:** To generate X-ray with good reproducibility and high efficiency by guiding a liquid or gas material into an X-ray generating vessel, cooling and solidifying the material in the vessel, and irradiating the solidified target material with laser beams or electron beams.

**CONSTITUTION:** In a device having a vessel 101 having an incident hole 113 for entering laser beams or electron beams and an emitting hole 118b for emitting the X-rays, and a vacuum exhausting means 114 for vacuuming the vessel 101, which device generates X-rays by irradiating a target material put in the vessel 101 with laser beams or electron beams and generating a plasma, the following constitution is added. Namely, the device has a material guiding means (target material storage equipment 117) for guiding a liquid or gas material into the vacuum vessel 101; cooling means for cooling the material in the vacuum vessel 101 and manufacturing a solid target material (coolant storing tank 105, heat conducting means 107, 112); and a base plate 104 to which the solid target material is adhered to hold it.



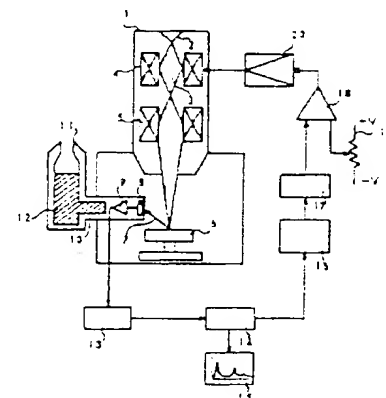
a: X-ray optical equipment

## (54) SCANNING ELECTRON MICROSCOPE

(11) 5-258693 (A) (43) 8.10.1993 (19) JP  
 (21) Appl. No. 4-54806 (22) 13.3.1992  
 (71) HITACHI LTD(1) (72) RIYUUCHIROU TAMOCHI(2)  
 (51) Int. Cl. H01J37/04, H01J37 252, H01J37 25

**PURPOSE:** To automatically set the unsensitive time generated in an X-ray detector to a proper ratio (20%-30%), in a scanning electron microscope having an energy dispersing type X-ray analyzing device, and realize highly precise analyses extending from metals and ceramics to polymer materials.

**CONSTITUTION:** The unsensitive time generated in an X-ray detector 8 is transferred from a pulse-height analyzer 14 to a CPU 16. In the CPU 16, the data for controlling a focusing lens power source 20 in conformation to the increase and decrease of the unsensitive time is transferred to a D/A converter 17, whereby the probe current is automatically set.

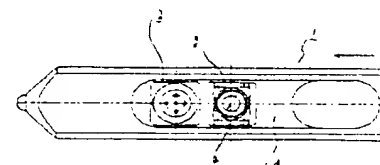


## (54) CHARGED PARTICLE EMITTING DEVICE AND COMPOSITE FARADAY CUP

(11) 5-258694 (A) (43) 8.10.1993 (19) JP  
 (21) Appl. No. 4-86256 (22) 10.3.1992  
 (71) ORIGIN ELECTRIC CO LTD (72) TETSUO TSUKAMOTO  
 (51) Int. Cl. H01J37/04, G01T1 29, H01J37/26

**PURPOSE:** To conform the center of an ion beam to the central position of a sample in an electron microscope device and momentarily detect the distributing state of the ion beam current.

**CONSTITUTION:** The ion beam guided to a charged particle emitting device having a sample holder having a plurality of Faraday cups arranged adjacent to a sample position is emitted to the Faraday cups, and the control power source of an ion beam emitting device is so controlled that the distribution of the ion beam current detected by the Faraday cups can be desired distribution values, and the ion beam distributing state is confirmed and detected. The sample holder is then moved to set the sample in the ion beam distribution equal position, and the sample is irradiated with the ion beam. The sample holder is set in the position where the beam is passed through a beam pass hole provided on the bottom part of one of the Faraday cups, and various power source voltages are regulated so that the distributions of the ion beam current detected by the Faraday cups are nearly equal to each other in this state.



1: sample holder, 2: composite Faraday cup, 3: ion beam holding member, 4A: window part